

# The Automobile Speaks

It tells you what it is, what it requires and it asks to be treated fairly.

By Frederick C. Guerrich.

## MY DISTRIBUTOR SYSTEM.

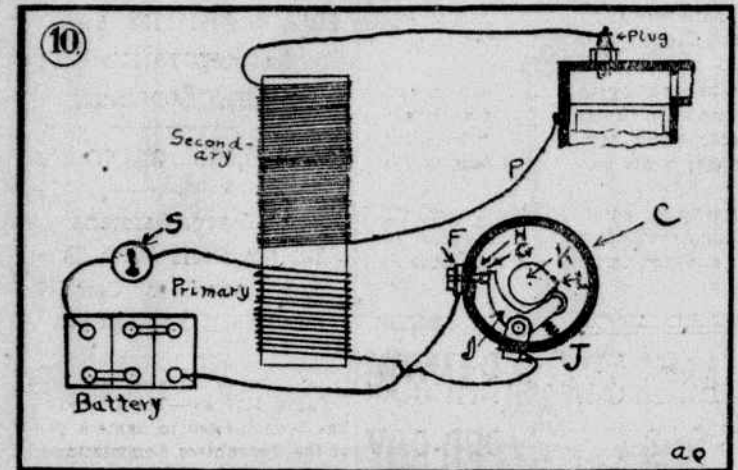
In a previous talk I told you about my coil and how it transformed the low voltage (pressure) current which comes from my battery into the current of high voltage which is required in order that the electricity can jump the air gap of my spark plugs and thus give the spark required to fire my mixture.

Let us now see how my coil is used in a practical ignition system. We will first develop a system for a single cylinder engine and then one for a four, six or more cylinder engine.

You were told that when the low voltage current (which is called the primary current) is suddenly interrupted there will be a shot of high voltage current through the second wire of my coil, which wire has a great many turns around the core. Therefore we must have some device for interrupting the flow of the primary current or for breaking the primary circuit.

To do this, an electric current must have a complete series of wires and units starting at the source, as from the battery, and returning to the battery after passing through the various units. This series of wires and instruments is called the circuit.

For breaking the circuit we have the interrupter as shown at C. In this the current from the battery goes to the binding post F, then flows through



the interrupter points G and H when these points are touching one another, and then the current flows through the spring closed metal arm I and then out at the binding post J, from which it will flow to and through the primary winding of the coil and then back to the battery. Thus, when the interrupter points touch or are closed, there will be a complete circuit for the current.

The cam K, which is driven from the engine and timed with it, has a hammer, L. As the cam revolves this hammer will strike the raised portion of the arm I, and in doing so will open the interrupter points. As the current must pass through the points, this opening of them will break the circuit and so interrupt the flow of the current. The interrupter might be termed a revolving switch opener.

As the spark is wanted only when the piston is up on the completion of the compression stroke, and as the spark will come only the instant the interrupter points are opened by the hammer, the cam K is set or timed to the engine by its driving gears so that it will open the points only at the instant the piston is in the above position.

You have learned that every time the low voltage (or primary) current from the battery is interrupted as above that, due to the magnetic action of the core of the coil, a shot of high voltage current will be induced to flow through the coil, the shot of high voltage (or secondary) current. This current will start on the coil, flow to the spark plug, then jump the air gap of the plug, giving the spark as it does, and then flow through the metal of the engine and finally back to the coil by way of the wire P.

As my engine is stopped by stopping the production of the spark, a hand operated switch is required to shut off the current. This is shown as S.

To review the action, when the switch is closed the primary current will flow from the battery to the interrupter points, through the points and then the interrupter arm, then go to the primary winding on the coil, through it and back to the battery. There will be no current in the secondary wires now, as it flows only when the interrupter points are suddenly opened.

If the engine be running or if you crank it the cam K will revolve, and in doing so will, by striking the arm I, suddenly open the points and so interrupt the flow of the current. This will result in a shot of high voltage current being induced to flow through the secondary circuit. This will start at the coil, go to the plug, jump across the spark plug points or air gap, then through the metal of the engine and through the wire P back to the secondary wire of the coil.

Please note that the primary wires and the secondary wires do not touch anywhere, their circuit being independent of one another. The current is made to flow in the one, due to the electromagnetic action of the core and coils. You can pass a pencil from one hand to the other without the hands touching one another, due to a muscular action. So you can pass the current (increased in voltage) from one circuit to the other without the circuits touching, due to a magnetic-electric action of the coils and core.

The amperage is decreased in the same ratio the voltage is increased. The secondary wires can therefore be very thin, which is fortunate, as it allows the great number of turns of secondary winding in a small space.

## ELECTRIC TRUCK HAS NEW FEATURES

Locking Differential of New Design Developed by Local Company.

For many years automotive engineers have striven to design a locking differential which would function automatically and positively. Such a differential has at last been developed and is embodied in the Walter motor trucks. Its use means infinitely higher driving efficiency in snow or under heavy road conditions. In fact, even under ideal urban conditions it reduces tire wear caused by the spinning of one wheel in traveling over cobble or the occasional hole existing in asphalt pavements. The differential, upon which the Walter Motor Truck Company has obtained a basic patent, employs a principle commonly used in steering gears, to wit, a worm and worm gear, but the application of these units, cut with proper angularity to make them irreversible, has never before been applied to a differential.

A most interesting test made with a five ton Walter truck to prove the positive action of the differential is to drive one wheel over a ten inch block while the other wheel turns in grease. This test is made with the truck either loaded or light. The Walter Motor Truck Company maintains that the only motor trucks of conventional types of drives able to perform in this manner.

Other unusual features of the Walter design are: tool-in wheels, distributing the weight of the merchandise load over the four rear tires rather than on only the inside tires; a materially lighter weight chassis and far less unsprung weight.

A full line of electric trucks are also made and a feature of great interest to the fleet owner is the interchangeability of parts. The drive on the electric unit is identical with that of the gasoline truck. Other parts, such as axle bearings, springs, axles, spring hangers, etc., are absolutely alike in both types.

## MITCHELL COMPANY REDUCES CAR PRICES

By far the most sensational news of the week along Automobile Row was the announcement that the Mitchell Company of Racine, Wis., had cut the price of their product nearly \$500, which makes it the lowest priced six cylinder car now on the market.

President George Stowe of the New York Mitchell Motor Company, in discussing the radical slashing of prices, said: "The Racine Company apparently decided that they would keep along the movement toward prewar conditions by a final slash in prices that was of so radical a nature that it could not fail to attract the attention of the automobile buying public."

## BURKE TAKES OVER SHERIDAN PLANT

An important announcement in the automobile field comes from Muncie, Indiana, to the effect that D. A. Burke, president of the Sheridan Motor Car Company, has purchased the Sheridan plant from the General Motors Corporation. It is reported that this deal, which includes the plant, a large amount of land adjacent, factory equipment and the name and good will of the business, involves about \$5,000,000.

Associated with Mr. Burke as one of a number of prominent stockholders in this transaction is W. C. Durant, founder and, for many years, president of General Motors.

It is rumored in automobile circles that this is to be a unit in another great group of companies to be headed by Mr. Durant, who has already been successful in organizing one of the largest industrial groups in the world.

The plans of the new owners contemplate a greatly enlarged plant at Muncie with greater facilities for the manufacture of Sheridan cars. Arrangements are already under way for this increased activity.

## OPPOSITION SHOWN TO ROAD LEGISLATION

All industry and a great portion of the agricultural interests of the country are up in arms against the hasty and ill advised legislation already enacted by a few States and pending in others which threatens to strangle one of the nation's most essential industries, motor truck transportation, according to reports sent in to the travel and transport bureau of the B. F. Goodrich Rubber Company.

The protests come from highway engineers, dairy farmers, fruit and vegetable growers, grain belt shippers, all lines of industry and commerce and other operators of motor trucks and their patrons.

They say increased license fees and restrictive legislation have been effected without sufficient investigation and without conclusive evidence.

A sensible solution is being worked out by the State of Illinois. The State Highway Department has under construction an experimental road containing sixty-four test sections, each section differing from the others in design.

## COLLEGE COURSE IN AUTO MECHANICS

Instruction in auto mechanics will be given as part of the summer session of the College of the City of New York, beginning July 6.

There will be a general automobile course on the construction, repair and operation of the gasoline automobile, with lectures, laboratory work and outdoor driving lessons. A special course will be given in starting, lighting and ignition, with lectures and laboratory work on all standard electric systems.

The courses will be under Messrs. James H. Troy, Edward U. Green and Charles Tappan at Convent Hall, 129th street and Convent avenue.

## ROAD CONDITIONS IN CONNECTICUT

Ideal Memorial Day Trip May Be Planned Through Picturesque Sections.

The road from Waterbury over Southington Mountain is in excellent condition excepting about a half mile which is under construction. The detour is over a hard surfaced road running parallel to the main route and only a quarter of a mile longer. From the foot of the mountain across Quinnipiac Valley through Middletown and Meriden to Middletown the road is all hard surfaced and in good condition.

The road from Middletown running east, after crossing the Connecticut River through Portland and Cohasset, is improved surface in good condition to East Hampton. From there on to Marlborough to Colchester the road is under construction and the detour is almost impassable; the entire road is between New London and Hartford via Chesterfield, Salem, Colchester, Marlborough and Glastonbury is under construction. When completed it will provide a fine concrete surface.

From Colchester there is a fair gravel road to Bozrahville and the remainder through Fitchville and Yantic to Norwich is hard surfaced, in good condition. The roads on both sides of the Connecticut River between Norwich and New London are hard surfaced and in excellent condition.

The Connecticut River route which runs on the west side between Saybrook and Middletown is all in fine shape.

From New Haven to Middletown via Durham the surface is fair with the exception of one or two very short stretches between Northville and Durham.

The road is closed on Middletown avenue, just outside of New Haven, due to bridge construction. The detour for east bound motorists is, from Chapel street, to run north on Temple street, turning right into Trumbull street, then left into State street, and then right with trolley into Middletown avenue, turn right into Grand avenue, turn right into Atwater street, turn left into Quinnipiac street, straight on to Montowese. For Middletown take right fork. For Meriden bear left. At Montowese continue on Quinnipiac avenue, turn right into Grand avenue, turn right into Atwater street, turn left into Middletown avenue, cross bridge over railroad with trolley, at once turn left into State street, turn right into Trumbull street, turn left into Temple street to Chapel in New Haven.

From New Haven to Waterbury via Bethany Centre and Naugatuck the road is in excellent condition, with the exception of a very short rough stretch on Main street in the centre of Westville. The new concrete road recently finished on the Naugatuck Valley from Waterbury to Torrington is perfect, in fact, the whole Naugatuck Valley from Shelton to Bridgeport never was in better condition than at the present time. From Danbury through the Litchfield Hills to Litchfield and Torrington is good hard surface through a very rugged and scenic section. From Bridgeport to Newtown via Stony Brook is in fair condition, as it has been recently top dressed with sand and oil. The route

**130TH STREET FERRY**  
More service to Palisade, Inter-State Park and Bear Mountain Routes.  
SATURDAYS, SUNDAYS AND HOLIDAYS—Boat every 5 minutes.  
OTHER DAYS—Every 15 minutes.  
RIVERSIDE & PORT LEE FERRY CO.

## NOVEL DEMONSTRATOR NOW ON BROADWAY

As every automobile dealer knows there is a great tendency on the part of the general public to think that when the word demonstrator is used that it means a car that is "doped" up to perform in a manner that would not be duplicated by an ordinary stock car.

To meet the arguments and ideas of these sceptics at least in part, the Hulet Motor Company officials conceived the idea of putting a stripped chassis right out of stock into demonstration service. The idea was to expose the "innards" of Cleveland construction to a maximum degree and to show and convince the prospective buyer that there is no deception of any nature whatsoever employed in a Cleveland demonstration. Of course this could be only accomplished to a certain extent, as it is naturally impossible to expose every part of a car on the road.

However, a customer seated in the seat or "observation tower" certainly can see the why and wherefore of things that would be impossible in a touring car. The action of the springs, brakes, propeller shaft, universal, valve mechanism, etc., is plainly visible, also the manner in which the frame takes the road strain and shock.

Q. If the valves are set for either closing or opening, don't the other come automatically? That is, you don't set both opening and closing, do you?

A. If you know one figure, that is enough, as the other will take care of itself.

Q. Would it be possible to take an ordinary transmission like that on my Studebaker, 1917, and make it give four speeds instead of three, so that I could get some speed out of it on the open road? I mean, would it be possible without adding a lot of money?

A. It probably could be done, but it certainly would be costly, and you would have to get a new countershaft.

Q. How can I tell if it is worth while to refend a tire? I have a few pretty good castings, but the treads are badly worn. The canvas looks good, and I think retreading might give me a lot more service out of them.

A. If you are sure the fabric is in good condition have new treads applied. It pays to do this when the fabric is not rotted at one spot or "thin," that is weak enough so it can be detected by feeling.

Q. What is the horse-power of the Cadillac motor, and how much does it turn up? A mechanic here says it is the highest speed motor in the country. How do you measure the speed?

A. The Cadillac engine develops about 80 horse-power, slightly in excess of 2,600 revolutions per minute, but the engine will show as high as 3,500 revolutions. The speed is measured with a tachometer.

## Extraordinary Sale

Rebuilt and Repainted

# ROAMER CARS

Fully Guaranteed

Note the Following Prices:

|  |   |
|--|---|
| 1919 Four Passenger Sport Model - \$1900     | 1919 Seven Passenger Touring Model - \$2250   |
| 1920 Four Passenger Sport Model - \$2400     | 1920 Four Pass. Sport Dusenber Model - \$2800 |
| 1921 Roadster Dusenber Motor, Demon - \$3900 | 1921 Four Pass. Sport Dusenber Motor - \$3900 |

Also 1916-17 Roamer Tourings at \$800 to \$1,000

**ROAMER SALES CO., INC.**  
1800 Broadway, near 59th Street, New York.

## Kissel's New Coach-Sedan

Original lines—distinctive finish—exclusive appointments—a Kissel triumph of Individuality.

A COACH-BODY, surprisingly roomy, with two extra-wide seats in each of which three people are accommodated in a cozy and comfortable manner.

Individual entrance steps opposite each of the four doors. The body is finished in Kissel black—fenders and enclosure in black enamel—wheels and window ledges in Kissel Gray.

It is luxuriously upholstered in Kissel Taupe plush, with sides and ceiling to match the cushions and seats.

It is mounted on the Kissel Custom-built chassis with the new crown type fenders, and is powered by the new Kissel Custom-built motor.

Deliveries now coming through.

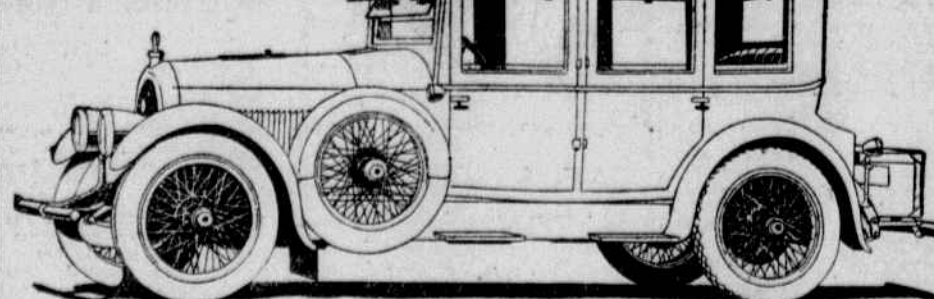
## SIDNEY B. BOWMAN AUTOMOBILE CO.

"You Can Take Sidney Bowman's Say-So on a Car"

Uptown Salesroom—Used Car Department—Service Station  
3261 to 3275 Broadway, Entire Block from 131st to 132nd St.  
Telephone Morningside 6600.

Downtown Salesroom after about June 1st, Nos. 1922 to 1924 Broadway, at 64th St.

## NEW COACH-SEDAN



## What Do You Know about an Automobile?

YOU may know more than most people about an automobile, but life is too short to learn everything about it unless you intend to be an automobile engineer.

So, after all, the safe way to buy a car is the same way you buy your typewriter, for instance, consider the intent and reputation of the makers.

The Standard Steel Car Company of Pittsburgh entered into the manufacture of Standard Eight cars with the idea of creating a sound, permanent business which would be based on an ever-growing public confidence. This fact is the big feature of Standard Eight Cars.

Other features are power, easy gear-shifting, double ignition, lightning pick-up, effortless hill climbing, extremely low speed possible in high—and other points that make motoring a pleasure. All cars have some of these features; the difference is in degree—and that can only be expressed by a trial.

See for yourself the difference by taking a trial ride in a Standard Eight.

Touring Car, \$3400 Sport, \$3400 Roadster, \$3400 Chassis, \$3150  
Verbiule Sedan, \$5000 Sedan, \$4800 Sedanette, \$4500 Coupé, \$4500  
Always prices f. o. b., Butler, Pa.

## STANDARD EIGHT A POWERFUL CAR

**STANDARD STEEL CAR COMPANY**

Sales and Showrooms: Main Office & Service Station  
Broadway at 64th St.  
New York City.  
Columbus 4645

Queensborough Plaza  
Long Island City  
Astoria 2003

Brooklyn Branch: 1127 Atlantic Avenue

BRADFORD & LOMAS, INC.  
New Haven, Conn.  
FORSYTH & DAVIS MOTOR CO.  
Ridgely, N. Y.  
MR. CHARLES WILLARD  
Newburgh, N. Y.

WILLIAM A. BURR, INC.  
White Plains, N. Y.  
HEUBLEIN GARAGE CO.  
Hartford, Conn.  
F. C. HUFF MOTORS CORP.  
Newark, N. J.